

A conceptual framework for impact assessment within SLCA

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Abstract

Purpose This paper aims at spelling out the area of protection (AoP), namely the general concept of human well-being and the impact categories in social life cycle assessment (SLCA). The applicability of the so-called capabilities approach—a concept frequently used for evaluating human lives—is explored. It is shown how the principles of the capabilities approach can be transferred to the impact assessment within SLCA.

Methods The literature concerning the AoP and the impact assessment has been critically reviewed from an applied philosophy perspective. The capabilities approach has been adopted for defining both the AoP and the impact categories.

Results The main results are the following: (1) The AoP is defined as autonomy, well-being freedom and fairness; (2) using the dimensions which constitute well-being together with the concept of fairness eight impact categories are proposed: life, knowledge and aesthetic experience, work and play, friendship, self-integration, self-expression, transcendence and fairness itself and (3) by examining the ‘Guide to Social LCA: Methodological Sheets’, it is demonstrated that our proposed framework can be used for structuring the previous work on impact assessment.

Conclusions The capability approach is one possibility for addressing the question ‘what is of importance in a human life?’ When applied in a practical field, like SLCA, this framework is not only useful for structuring data but also for disclosing our own normative assumptions about what counts as valuable in a human life. Thus, the normative evaluation is more coherent.

Keywords Area of protection (AoP) · Capabilities approach · Impact assessment · Impact categories · Social life cycle assessment (SLCA) · Well-being

1 Introduction

In the past few decades, environmental problems have been endangering our planet, the well-being of people living today and the living conditions of future generations. In order to diminish the negative effects and side effects of our actions on our natural environment, sustainability has become the guiding paradigm for our further development. New assessment and measuring tools are being devised to make production more efficient and less harmful for people and their environment. When implementing sustainable development, there is a broad consensus that one should consider the three different pillars: environment, economy and society.

In the life cycle assessment (LCA) community, this idea is taken up by combining the environmental life cycle assessment (ELCA) with life cycle costing and social life cycle assessment (SLCA) to life cycle sustainability assessment (Klöpffer 2008). While the ISO 14040 and 14044 serve as an international standard for ELCA, there is still little experience with the use and implementation of SLCA as a tool.

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SLCA is basically an act of evaluation. It could be used for carrying out a comparative analysis at the level of sectors/industry, i.e., cross-sector/cross-industry evaluations in terms of the effects on what is important in human life. SLCA can also be applied within companies/organisations for strategic analysis and for structuring complex decision-making processes for identifying optimisation potentials within a company/organisation.¹

In recent years, a lot of research has been conducted concerning the further advancement of SLCA. One step toward standardisation was the publication of the ‘Guidelines for Social Life Cycle Assessment of Products’, which provide a first *directive* for the practice of SLCA closely following the ELCA methodology. The aim of the guidelines is to ground the assessment of social and socioeconomic impacts ‘in line with the ISO 14040 and 14044 standards for Life Cycle Assessment’ (Benoît and Mazijn 2009, 5).

The guidelines are understood as a *flashlight* that shows where further research is needed. In a subsequent publication, the authors of the guidelines identify the future research needs (Benoît et al. 2010, 162).

Our aim is to address one of these open gaps by having a closer look at questions regarding the impact assessment. We want to clarify how the AoP and the impact categories in SLCA can be understood from an applied philosophy perspective. Firstly, the strength of practical philosophy lies in the clarification of concepts, like well-being, basic needs, fairness, autonomy, etc. and their relationship, secondly, through providing the SLCA with a sound normative foundation it becomes explicit which values are presumed. The disclosure of normative presumptions is of particular importance because we normally have the tendency to investigate ethical or social issues with our pre-conceived values. This point becomes clear if we try to formulate our own value orientations and bring them in a coherent structure. For example, most of us might think that equality is a good thing. But if we think a bit further, we notice that our concern might not be equality itself. For example, if Paul has no access to drinking water but Paula does, we could either provide Paul with access to drinking water or cut off Paula’s access. So maybe equality is not our main concern but equal fulfilment of basic needs or equal access to primary goods which can in turn be seen as a precondition of well-being or autonomy and so on.

Taking these difficulties as a starting point, our contribution will be twofold. In the first step (Section 3), a general normative framework will be proposed, employing the capabilities approach to address the questions of what is important in a human life and what information can be used

for evaluating human lives. This is a further elaboration of a topic already touched on briefly in the guidelines.

In a second step (Section 4), we will show how SLCA’s AoP can be divided and subdivided into impact categories and subcategories with reference to the intrinsic values of peoples’ capabilities. The previous work on SLCA, notably the methodological sheets developed by the UNEP/SETAC Life Cycle Initiative Social LCA Project Group for subcategories of impact, can be integrated within our newly proposed framework.

2 Review of previous work on impact assessment

2.1 Area of protection

The question, ‘why care about the impacts of our production and consumption processes?’ leads to debates regarding what is valuable and therefore worth protecting. ELCA mainly focuses on the biophysical impacts. The AoP covers human health, natural environment, natural resources and sometimes man-made environment. In the LCA community, it is often said that this refers to some underlying, intrinsic values, namely human life, nature and cultural values (Udo de Haes et al. 1999; Dreyer et al. 2006). ELCA, however, does not cover some important impacts on human lives. Thus, we are faced with the paradoxical situation of avoiding harm to environment and human health while ignoring other aspects of human life and thus the aims of sustainability. Economic assessments that supplement ELCA are not able to overcome this deficiency entirely. The focus of ELCA on mere economic aspects such as the gross domestic product (GDP) provides a rather poor indicator of human well-being.² Points of criticism are for example that neither volunteer work nor unpaid domestic services are captured in the GDP but our standard of living benefits from both. Expenditures which do not contribute to the well-being of people, however, increase the GDP, like remedial and defensive expenditures. Surplus, the GDP only captures averaged information but does not allow for an assessment of the well-being of individuals because it does not say anything about distribution.³

This leads to the necessity to supplement ELCA with genuine SLCA. But what is the AoP here?

¹ Our framework is not designed for resolving the questions about the appropriate level of analysis for SLCA.

² In other areas of political decision making, this recently has led to a discussion about more sophisticated measures for human well-being. A notable indicator used by the United Nations is the Human Development Index (HDI). This indicator builds upon Sen’s capability approach as it is used in this paper. More sophisticated measurements, however, face the problem, they rely on a huge amount of data, which are often not available or updated.

³ This criticism led to the development of other measurement tools, like the HDI or the Gross Happiness Index.

Note that the AoP is a normative concept: It tells us which intrinsic values should guide our actions. This is just the same for the ELCA as it is for the social one. For SLCA, however, problems associated with the normative aspects become more pronounced. While in environmental or the economic context we can fall back onto well-established indicators such as CO₂ equivalents or GDP, social aspects have not yet been brought down to a common operationalisable denominator. Nonetheless, papers on SLCA show a broad consensus that the additional AoP should be human well-being itself (Weidema 2006; Dreyer et al. 2006; Jørgensen et al. 2008, 2010; Benoît and Mazijn 2009). Dreyer et al. (2006) put forward that in SLCA, we should have a broader understanding of what is important for a good and decent life and draw the conclusion that human dignity and human well-being is the new AoP, embracing human health, human dignity and basic needs fulfilment. This broader perspective is an innovation from the angle of ELCA that redefines sustainable development. The main difference between ELCA and SLCA is that the latter addresses this goal more directly by defining human well-being as the actual AoP.

Generally defining the AoP as human well-being, however, is only the very first step. It is by no means clear how to conceive this concept itself and how to relate well-being to easier accessible quantities such as human needs or to resources such as income or food, to fulfilment of individual desires, or to capabilities and freedoms. Furthermore, it is widely disputed which indicators are best employed to measure each of these. The guidelines are fully aware of these difficulties. They broadly define human well-being as ‘a description of the state of an individual’s life situation’ (Benoît and Mazijn, 22). By referring to the capabilities approach of Sen and Nussbaum, well-being is understood as a multidimensional concept encompassing diverse aspects: Well-being cannot be reduced to any one single dimension such as the GDP. This is not to deny the fundamental importance of income for a decent living but to emphasize that income alone can never be sufficient for it. This line of argument is reminiscent of the reasons for introducing the HDI into the United Nations’ Human Development Report (HDR): ‘The central message of this Human Development Report is that while growth in national production (GDP) is absolutely necessary to meet all essential human objectives, what is important is to study how this growth translates—or fails to translate—into human development in various societies’ (HDR 1990, iii). The HDR then makes use of the *capabilities approach* in measuring human development, arguing that capabilities represent the ‘essence of freedom’ (HDR 1990, 16). The concept of capabilities will be discussed in Section 3. Here, however, it is of essential importance that it is distinct from ELCA, for the social analysis characterizing the AoP and

determining the impact categories from it is a more value-laden process. This is not a deficiency of SLCA but lies in its very nature and necessitates an honest, self-consistent and a fairly systematic approach which we aim to provide below.

2.2 Impact categories, subcategories in the guidelines

The guidelines define social impacts as ‘consequences of positive or negative pressures on social endpoints (i.e. well-being of stakeholders)’ (Benoît and Mazijn 2009, 43). There is a broad consensus in the SLCA community that the classification of the social impacts should be twofold according to impact and stakeholder categories, which represent all social groups affected during the production and consumption process. This proposal was put forward by Griefhammer et al. (2006). They define the stakeholder group workforce (workers/employees), local community, society (national/global) and consumers. In the guidelines, a fifth category, value chain actors, was taken up (Benoît and Mazijn 2009, 46). The Guidelines leave considerations of other stakeholder categories, like future generations or NGOs open.

The classification according to stakeholder and impact categories is not an either/or decision but a complementary one. Social impact categories are assigned to their relevant stakeholder groups. Some impact categories can be related to all stakeholder groups while others might only be relevant to one or some of them.

This twofold classification is inevitable as positive and negative social effects of one, and the same impact category can vary greatly between different groups. For example, it is not hard to imagine that the working conditions could be harmful to the workers’ health while the consumption of the product is completely safe for the consumers or might even increase their well-being.

Impact categories in SLCA are being defined to categorize the ways in which the stakeholder can be affected within the AoP. There is still no consensus as to which impact categories should be included in the SLCA. Because impact categories will be on a quite abstract level, inventory data are first classified into subcategories, which should be further linked to impact categories and stakeholder groups. Subcategories are defined according to international agreements, such as the UN declaration of human rights or the convention on workers’ rights. Subcategories in the stakeholder group ‘workers’ are, for example, freedom of association and collective bargaining, child labour, fair salary, working hours, forced labour, equal opportunities/discrimination, health and safety and social benefits/social security (Benoît and Mazijn 2009, 49). Currently, the Life Cycle Initiative (2010) is working on the methodological sheets concerning the indicators and subcategories for different stakeholders.

3 The capabilities approach: making sense of the AoP

Inquiring into the AoP of SLCA is inevitably a normative exercise. For this reason, it needs a reliable evaluative framework that allows for discussing normative questions systematically and in due detail. The capabilities approach offers such a framework that has by now gained prevalence in social policies and studies on human development, as has been mentioned in the introduction. It is also already used to elucidate the notion of human well-being in the context of sustainable development (Comim et al. 2007; De Vries and Peterson 2009; Holland 2008; Ott and Döring 2008; Schultz et al. 2008; Van Ootegem and Spillemaeckers 2009; Omann et al. 2010). In the present study, the approach is introduced to spell out the AoP and its impact categories as well as to rethink previous classifications.

Before describing the approach itself, it is helpful to take a step back and view the task in outline. From this perspective, we may understand SLCA in a very general way as an act of evaluation. As with every evaluation, it is important to be precise about the underlying measure. Scientists, for example, may be evaluated with regard to the number of their publications, or to the quality of their teaching, or for that matter with regard to their overall happiness. The results are likely to vary, and this is why the respective considerations crucially depend on the purpose of the inquiry.

In short, every evaluation whatsoever needs an ‘informational base’, i.e., certain information about the world that is essential for making adequate judgements (Sen 1992). Since the evaluation at hand is about the impacts on human lives, it is crucial to understand what is important in them and by which information to assess that. To be sure, knowing which information to take into account is far from having made complete judgements about normative issues like, say, matters of justice. Making the informational base explicit can only be a first step, but it is a crucial one that has often been neglected.

Speaking of information incautiously can be thoroughly misleading in the present context, with different kinds of information to deal with. Hence, it is helpful to introduce a distinction between information about things *conducive* to a good life and information about the elements *constitutive* of it. This reflects the fundamental distinction between instrumental and intrinsic importance. For instance, the resources necessary for human well-being must not be confused with well-being itself, just as indicators are not to be confused with what they indicate. For the same reason, inventory information is to be distinguished from the ‘informational base’ of SLCA, the latter containing information about intrinsically important aspects of human life.

3.1 Functionings and freedoms

Following Sen in valuing human lives, we have to evaluate their constitutive elements as well as certain freedoms. With the latter, we shall deal presently, but first it is important to describe what human lives are made up of and to introduce the notion of human functionings.

Before evaluating a human life, we would first want to give a description of it. And when describing it, listing what a person manages to do and to be, her actions and the states she is in, will yield the essential information. *Does* the person in question eat healthy, have a fulfilling family life and participate in elections? and *is* she literate, happy and adequately nourished? In evaluating someone’s life, we would not mention all the resources the person *has*, but what she is actually able to *do* with them or to *be* with their help (Sen 1992).⁴ Both beings and doings are referred to by the notion of human functioning. ‘Functionings’ therefore are the basic elements constitutive of a human life, and a set of all realized functionings would provide a comprehensive description of it. Any evaluation of this life will consequently proceed by evaluating the functionings. As Sen suggests, in practice it is helpful to construe the functionings making up a life as an n-tuple. Hence, a person’s life will be described by the n-tuple *f* that contains the person’s realized functionings.

Apart from achieved functionings, it is also the freedom of choice that is of intrinsic importance in a person’s life. This can make a difference by itself, as an example may show. Referring only to the conditions of nourishment, we might find two people seriously lacking in adequate nutrition. In judging the qualities of their lives without a reference to their freedoms, we might well overlook that one of them is starving, while the other one, having chosen not to eat, is fasting (Sen 2009). Generally speaking, the freedom to choose the life one has reason to value has an importance of its own for human beings. Hence, it is not enough to evaluate the life someone is actually leading, but to see further if she has chosen it from a very restricted or rather a wide range of alternatives.

Employing the capabilities approach in an SLCA framework, it turns out that the informational base of evaluation has to be constructed from functionings and freedoms, or better: from the freedoms to choose and realize valuable functionings. Again both aspects are captured in a third notion: the *capability*. The capability of a person can be construed as the set of alternative lives this person can choose to realize (Sen 1992). In other words, a person’s capability embraces all the lives this

⁴ What a person is actually able to do and to be is of course not only a question of her resources, but hinges on a number of conditions including societal factors, the environment, her biological predispositions, etc.

person is free to choose and live. Regarding different lives as different vectors of functionings, the capability C can be formally defined as the set of vectors of functionings a person may choose from:

$$C := \left\{ \vec{f}_1 = \begin{pmatrix} f_1^1 \\ \vdots \\ f_n^1 \end{pmatrix}, \dots, \vec{f}_m = \begin{pmatrix} f_1^m \\ \vdots \\ f_n^m \end{pmatrix} \right\}.$$

The capabilities, containing functionings as well as reflecting freedoms, therefore constitute the evaluative space mentioned above. It should be noted that the freedoms people enjoy are often much harder to assess than the functionings they have actually managed to realize. Although a complete operationalisation of the capabilities approach would have to focus on freedoms, it is often much easier to work only with these ‘achieved functionings’ (Sen 1992).

It should also be noted that there is a divergence of this technical conception of capabilities from the everyday usage of that notion. Ordinary language allows for speaking of ‘the capability to eat healthily’, ‘the capability to participate in community life’, ‘the capability to read and write’, to name but a few. This manner of speaking is also quite pervasive in scientific studies utilizing the capabilities approach; it can be found in the United Nations’ HDI and even in the works of Sen. It is a very convenient usage—and we shall adopt it soon for this very reason—but it obscures the fact that the capabilities approach is ultimately about choosing different lives, not just about single activities (Sen 2009).

3.2 Freedoms and rights

The capabilities approach is meant for assessing what is important in peoples’ lives, and it puts a mark on their actual freedoms to choose. In other words, autonomy is one central concern of this approach—that is why we are making it part of the AoP. But when it comes to comparing the lives of many people, a further aspect of freedom gains importance that cannot be subsumed under the capabilities perspective: the process aspect of freedom (Sen 2005). This concerns questions of equal opportunity and fair processes.⁵ A review of the impact categories proposed for SLCA reveals that process aspects of freedom are certainly regarded as important factors of evaluation. From this, it is clear that SLCA’s AoP cannot be restricted to autonomy

or even the narrower notion of well-being-freedom,⁶ since these concern the quality of individual lives, whereas questions of fairness and equal opportunity concern interpersonal aspects. Consequently, we introduce the special impact category of *fairness* to answer these questions. To assess the process aspects of freedom, we propose that the capabilities perspective should be amended by the use of certain basic rights like human rights. As Sen notes, ‘[...] the ethical assertion that is being made through the declaration of a human right [...] is about the critical importance of certain freedoms [...] and correspondingly about the need to accept some social obligations to promote or safeguard these freedoms’ (Sen 2009, 358). Hence, rights can be seen to secure freedoms, and therefore, the respect of rights is a way to estimating the amount of freedom.

These considerations lead to the following conclusions regarding a general framework for SLCA:

1. SLCA’s *AoP* is autonomy, well-being-freedom and fairness, thereby covering personal as well as interpersonal aspects of valuable human living and justice
2. The *informational base* of SLCA has to be constituted (a) of peoples’ capabilities to choose the lives they have reason to value and (b) of their access to fair processes

4 Applying the CA in SLCA

Even if it is generally accepted that functionings are what is constitutive of human lives and that functionings and freedoms are the elements of intrinsic importance, this will not suffice to establish a specific informational base. There are a vast amount of functionings realized in each life, some of them much more important than others and many will not even be taken into account in evaluating human lives. Being adequately nourished, being healthy, knowing about the world and participating in community decisions are certainly important functionings, but using a special washing powder may be less so (Sen 1992). So the question arises, which functionings actually to examine. For this purpose, a more general structure is required to facilitate a better overview, and fortunately, the SLCA literature offers two powerful conceptions already introduced above: stakeholders and impact categories.

⁵ For the purpose of evaluating justice, two roles of freedom have to be distinguished: a process aspect and an opportunity aspect. Since we cannot deal with this in detail now, see Sen 2009, 228–232; Sen 1992, 18f.

⁶ Many people value things or actions that have adverse effects on their well-being, e.g., they choose to smoke and risk their health. Therefore, the relation between the full range of action and the actions conducive to a person’s well-being is a topic Sen has repeatedly returned to, contrasting “agency-freedom” with “well-being-freedom” (Sen 2009). The capabilities approach is not from the outset limited to assessing well-being, but takes into account all the functionings a person may have reason to value.

We will not deal with the classification of stakeholders in detail, but we demonstrate that using the capabilities approach forms no barrier whatsoever to applying this classification. *Capabilities and freedoms are meant to be attributed to individual persons*, and insofar as the stakeholder categories are but compilations of individuals to be examined with different thematic priorities, both perspectives are complementary. Moreover, the CA requires being very specific regarding the individuals that we focus on. Whose autonomy or well-being and whose freedom are at stake when examining value chain actors or society?

4.1 Impact categories and the dimensions of human living

Turning now to a conception of impact categories, we best conceive of them not as contributing to a good human life but as being parts or dimensions of it. This is to say that, just like capabilities and freedoms, they are not separate from living itself and are of intrinsic importance, yet unlike capabilities and freedoms, they are much fewer and broader categories and thereby allow for a better orientation. Sabina Alkire reviews over 30 ways of distinguishing different dimensions of life and finally decides to follow a proposal by John Finnis et al. that covers most of the others and will be taken up here (Alkire 2002a, b; Finis et al. 1987).

Finnis et al. argue that human actions are always aimed at some ultimate good wherefore people may be said to have a kind of basic motivation for them. Since we have chosen autonomy as the central part of the AoP, this approach perfectly matches our decision: Autonomy, the freedom to choose, would be quite naturally structured by such basic motivations because choices can be distinguished with regard to their underlying motivations. What is meant by basic motivations Alkire explains in a vivid example: “[...] I may ask, ‘why did you come to this evening lecture about dolphins.’ To which you might reply, ‘because it seemed interesting.’ I would ask again, ‘why did it seem interesting.’ To which you might reply, ‘Well, there were several reasons, really. Partly I wanted to meet with others who were had [sic!] invited me and go to the pub afterwards, and partly I wanted to learn something radically new.’ I would persist, as only a two-year old or philosopher can, to ask, ‘why?’ To which you might explain, with your endless patience, ‘On the one hand, I came for friendship, on the other hand, I wanted to increase my knowledge—that’s all I can say.’ In other words, the simplest reasons you give to explain your action refer to ‘friendship’ and ‘understanding’” (Alkire 2002a, 185).

Friendship and understanding or knowledge are but two of the basic reasons for action, two ultimate ends. Finnis et al. try to derive a comprehensive list of seven items from their account of human nature that Alkire summarizes as follows:

Life itself—its maintenance and transmission—health, and safety.

Knowledge and aesthetic experience. ‘Human persons can know reality and appreciate beauty and whatever intensely engages their capacities to know and to feel.’

Some degree of excellence in *work and play*: ‘human persons can transform the natural world by using realities, beginning with their own bodily selves, to express meanings and serve purposes. Such meaning-giving and value-creation can be realized in diverse degrees.’

Friendship: ‘various forms of harmony between and among individuals and groups of persons—living at peace with others, neighbourliness, friendship’.

Self-integration: ‘within individuals and their personal lives, similar goods [i.e. forms of harmony, M.D.] can be realized. For feelings can conflict among themselves and be at odds with one’s judgements and choices. The harmony opposed to such inner disturbance is inner peace.’

Self-expression, or practical reasonableness: ‘one’s choices can conflict with one’s judgements and one’s behaviour can fail to express one’s inner self. The corresponding good is harmony among one’s judgements, choices, and performances—peace of conscience and consistency between one’s self and its expression.’

Transcendence: ‘most persons experience tension with the wider reaches of reality. Attempts to gain or improve harmony with some more-than-human source of meaning and value take many forms, depending on peoples world views. Thus, another category ... is peace with God, or the gods, or some nontheistic but more-than-human source of meaning and value. (Alkire 2002b; Finis et al. 1987).

By taking this list to be a comprehensive account of the basic reasons for action, this approach can embrace the whole range of autonomy. Everything a person wants to do is reflected here. Obviously this also includes all actions that are contrary to the person’s well-being in a narrower sense.

4.2 The complete framework: assembling the pieces

We have so far discussed the elements that will make for a usable yet accurately detailed normative framework for SLCA. The task at hand is to bring these together, which we will undertake in six steps.

- (a) The AoP has been identified to be *autonomy, well-being-freedom* and *fairness*, with the second one actually being a fraction of the first.

- (b) To give a more detailed account of autonomy and well-being-freedom, we are now able to employ the *dimensions of human lives* as impact categories, allowing for a better orientation. To be sure, these dimensions are not different from the AoP but are its constitutive elements. For instance, well-being is not different from health, but health is a constitutive part of well-being.
- (c) Using the *capabilities approach*, these still very general dimensions of life can be linked to actual practice. Capabilities refer to what people can achieve and have actually managed to achieve in their lives, and they are also elements of intrinsic importance. After asking what might be so important about this functioning or that freedom, it will be easier to merge the single capabilities with the dimensions. Just like the question ‘what is so important about the capability to attend an evening lecture about dolphins?’ will help to figure out that it fits into the dimensions ‘friendship’ and ‘knowledge’. Since the dimensions of life are the impact categories of the AoP, the capabilities will best be seen as their *subcategories*.
- (d) Fairness is a part of the AoP that cannot be subsumed under autonomy and well-being freedom. But since it is not a complex and multidimensional concept, it will suffice to designate its constitutive elements one by one. It is all the instances to do with *equal opportunity*, *non-discrimination*, *fair processes* and the like that make for this part of the AoP.
- (e) Of course freedoms and functionings, as precisely as they may be formulated, are not easy to measure. Hence, it will usually be necessary to find a set of *indicators* for them. This is common practice in SLCA, as it is in social sciences generally. Indicators for impact categories or subcategories are referred to by the name of ‘inventory indicators’ in the guideline.
- (f) It has been demonstrated above that the *stakeholder categories* can be combined with the impact categories from a capabilities perspective. The same is true for the elaborate framework presented here. The AoP is taken to refer to individual persons, each of whom will act with an eye to the dimensions of life and will have access to more or less fair processes; the stakeholders are compilations of individuals examined with different thematic priorities.

Our framework can be illustrated as depicted (Fig. 1)

4.3 Integrating previous work on SLCA

Having completed the normative framework, we turn now to demonstrate its applicability. Considering the methodological sheets makes it possible to link our theory to

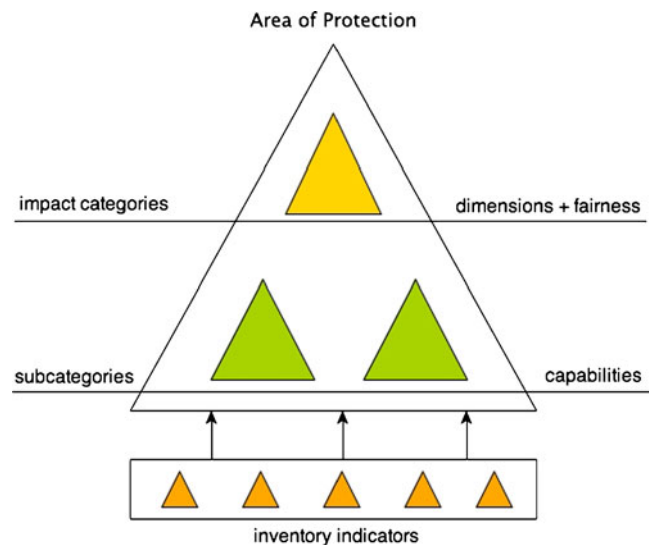


Fig. 1 Normative SLCA framework

indicators already being used. It also permits us to demonstrate how previous work on SLCA might be integrated into the new framework. The benefit of this approach turns out to be threefold: Firstly, it will help to reveal some confusion regarding the normative status of established subcategories; secondly, it will help to overcome this confusion and thereby allow for more accurate inquiring; thirdly, the framework could help to identify new subcategories.

We examine three exemplary stakeholder categories from the methodological sheets, namely workers, local community and consumers. For each of these categories, we will take a closer look at some of the proposed subcategories. Ideally we would expect the subcategories to be either the capabilities of people or fair processes.

Yet it turns out that this is true for only some of them. Others refer to a whole dimension of human life, and others again are not of intrinsic importance at all but are actually only indicators.

4.3.1 Stakeholder: workers

Subcategory ‘health and safety’ is perhaps the easiest to fit in, as it is already the dimension of ‘life itself’. It is a very general concept which is to be adapted to the respective context and aim of investigation. The general focus in the stakeholder category ‘workers’ is on working conditions that do not negatively affect workers’ health and do not endanger their safety.

Subcategory ‘hours of work’: The methodological sheets note that these working hours should be in compliance with laws and industry standards. Workers must not spend an excessive amount of time at work and even if they work slightly longer they should be

compensated at premium rates. The excess of working hours undermines the ‘capability to enjoy recreational activities’, which fits in two dimensions: ‘life itself’ and ‘friendship’. Without this capability, the person’s physical and mental health can be seriously endangered as well as the person’s personal relations, which fits into the ‘friendship’ dimension.

Subcategory ‘equal opportunity’ refers to instances of fair processes and is therefore of importance in itself and refers therefore to the impact category fairness.

Subcategory ‘forced labour’: not being able to choose your work place and being forced to work undermines the human ‘capability to choose to do meaningful work’. Without this capability, we are unable to fulfil the dimension of ‘work and play’.

4.3.2 Stakeholder: local community

Subcategory ‘delocalization and migration’: The methodological sheets note that it is important to see how migrants fit into new communities and that resettlements should be conducted according to written laws with the groups given the chance to refuse displacement. ‘Delocalization and migration’ are intrinsically neither good nor bad, but as an indicator, they affect the ‘capability to participate in community life’, which is part of the dimension ‘friendship’. We also derive the ‘capability to choose one’s place of living’ which fits into the dimension of ‘self-expression’.

Subcategory ‘cultural heritage’: Here international conventions that protect ‘cultural traditions and religious beliefs’ are used. We rephrased this into two capabilities: ‘capability to practice and revitalize cultural tradition’ and the ‘capability to practice and revitalize religious belief’. In having the first capability, one can clearly pursue relationships with people from their own culture, but also with people from other cultures if they respect the other culture. This capability is part of the dimension ‘friendship’. The ‘capability to practice and revitalize religious beliefs’ clearly enables the person to follow his spiritual goals and obligations and belongs to the dimension ‘religion’.

4.3.3 Stakeholder: consumers

Subcategory ‘health and safety’: The consumers should have the right to know what they are consuming, and the subcategory focuses on consumers complaints and negative effects products might have on health and safety.

This is the same as for the stakeholder category ‘workers’ parallels the dimension ‘health and safety’.

Subcategory ‘transparency’ refers to knowledge about the product consumers are purchasing and the social responsibility of the manufacturer. With the clear knowledge about the product, the consumers have a ‘capability to make informed responsible decisions’. This fits into the dimension ‘self-expression’ because their judgement on how to act can be in accordance with their choices.

However, with this supply of information from the manufacturer, the customer is also able to make informed decisions that affect his/her or others health. Without the necessary knowledge, the consumer might not be recycling the product properly which may lead to environmental problems ultimately harming the ‘life itself’ human dimension.

5 Conclusion and final remarks

We proposed a general normative framework for SLCA built on the capabilities approach. We demonstrated that this concept can be used for both defining the AoP and the impact categories and for structuring the previous work on SLCA.

We argued that it is of great importance to make normative assumptions explicit and in so doing open them for general discussion. The capabilities approach offers a convincing conception of what makes for a valuable human life, namely realized functionings and the corresponding freedoms to choose. All evaluative questions within SLCA will ultimately have to be answered with regard to these. Because the capabilities approach is passing over the fairness aspect addressed for example in the Human Rights Convention, we supplemented the AoP with fairness itself as an additional impact category.

Applying these ideas to SLCA, we eventually defined the AoP as autonomy, well-being freedom and fairness. Since autonomy and well-being freedom are multidimensional concepts, the AoP can be further divided into different dimensions which are constitutive of a valuable human life and are irreducible to one another: life itself, knowledge and aesthetic experience, work and play, friendship, self-integration, self-expression and transcendence. Amending fairness itself as supplement yields all the eight impact categories we propose.

In a second step, we applied our framework to some examples taken from ‘The Guide to Social LCA: Methodological Sheets’. We demonstrated firstly that most of the subcategories can be easily reformulated in the language of the capabilities approach and assigned to the impact categories. Secondly, we showed that not all of the subcategories lie on the same level. While, for example,

‘health and safety’ is not a subcategory but an AoP, ‘hours of work’ is an indicator for assessing the ‘capability to enjoy recreational activities’. The original data, confusing evaluative and descriptive aspects as well as different levels of generality can now be embedded into a coherent system.

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